Selection Guide

Single Board Computers

PICMG 1.3 SHB

Model Name		NuPRO-E340	NuPRO-E315	NuPRO-E330	NuPRO-E320
CPU	Socket	LGA1155	LGA775	LGA1156	LGA775
	CPU Support	Intel® Core™ i7/i5/i3	Intel® Core™2 Quad/Duo	Intel® Core™ i7/i5/i3	Intel® Core™2 Quad/Duo
	FSB	N/A	1333/1066/800 MHz	N/A	1333/1066/800 MHz
Chipset	Northbridge	N/A	G41	N/A	Q45
	Southbridge	Q67	ICH7R	Q57	ICH10
Memory	DIMM Type	DDR3	DDR3	DDR3	DDR3
	Speed	1333/1066 MHz	1066/800 MHz	1333/1066 MHz	800/1066 MHz
	DIMM	2	2	2	2
	Max. Capacity	8 GB	4 GB	8 GB	4 GB
	ECC/Reg.	--	--	--	--
Form Factor	Dimensions	388 mm x 126 mm	388 mm x 126 mm	338 mm x 126 mm	338 mm x 126 mm
	Bus	PCI Express® / PCI™	PCI Express® / PCI™	PCI Express® / PCI™	PCI Express® / PCI™
Display	Graphics	Intel® HD Graphics	Intel® GMA 4500	Intel® HD Graphics* or external	Intel® GMA 4500
	Video Memory	--	DVMT 512MB	--	DVMT 512 MB
	DVI support	Yes	--	--	--
	LVDS Support	--	--	--	--
Ethernet	Gigabit	2	1	2	2
	Controller	Intel® 82579LM and Intel® 82574L	Intel® 82574L	Intel® 82578DM and Intel® 82574L	Intel® 82574L
Storage	Serial ATA	2x SATA 6 Gb/s, 4x SATA 3 Gb/s	4x SATA 3 Gb/s	6x SATA 3 Gb/s	4x SATA 3 Gb/s
	IDE	--	--	--	1x ATA133
	CompactFlash	--	--	--	--
	Floppy	--	--	Yes	Yes
I/O Ports	USB	2x USB 3.0, 12x USB 2.0	8x USB 2.0	9 x USB 2.0	9x USB 2.0
	LPT	Yes	Yes	Yes	Yes
	COM	5x RS-232, 1x RS-232/422/485/485+	5x RS-232, 1x RS-232/422/485/485+	5 x RS-232, 1 x RS-232/422/485/485+	1x RS-232, 1x RS-232/422/485/485+
	PS/2 KB/MS	Yes (internal pin header)	Yes (Mini-DIN)	Yes (Mini-DIN)	Yes (Mini-DIN)
	Audio	optional audio board	optional audio board	optional audio board	optional audio board
Expansion Slots		--	--	1x PCIe Mini Card slot	--
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PICMG 1.0 SBC

Model Name		NuPRO-A331	NuPRO-935A	NuPRO-730	NuPRO-A301
CPU	Socket	LGA1156	LGA775	Socket P	LGA775
	CPU Support	Intel® Core™ i7/i5/i3	Intel® Core™2 Quad/Duo	Intel® Core™2 Duo Mobile/Celeron®	Intel® Core™2 Duo
	FSB	N/A	1333/1066/800 MHz	800/533 MHz	800 MHz
Chipset	Northbridge	N/A	Q35	GME965	945GC
	Southbridge	Q57	ICH9	ICH8M	ICH7
Memory	DIMM Type	DDR3	DDR2	DDR2	DDR2
	Speed	1333/1066 MHz	800/667 MHz	667 MHz	533 MHz
	DIMM	2	2	2	2
	Max. Capacity	8 GB	4 GB	4 GB	2 GB
	ECC/Reg.	--	--	--	--
Form Factor	Dimensions	388 mm x 122 mm	338 mm x 122 mm	338 mm x 122 mm	338 mm x 126 mm
	Bus	PCI™ / ISA	PCI™ / ISA	PCI™ / ISA	PCI™ / ISA
Display	Graphics	Intel® HD Graphics* or external	Intel® GMA 3100	Intel® GMA X3100	Intel® GMA 950
	Video Memory	--	DVMT 256 MB	DVMT 384 MB	DVMT 192 MB
	DVI support	Yes	--	--	--
	LVDS Support	--	--	Yes	--
Ethernet	Gigabit	2	2	2	1
	Controller	Dual Intel® 82574L	Intel® 82566DM and Intel® 82573L	Intel® 82573L	Intel® 82574L
Storage	Serial ATA	6x SATA 3 Gb/s	2x SATA 3 Gb/s	2x SATA 3 Gb/s	4x SATA 3 Gb/s
	IDE	--	1x ATA133	1x ATA133	1x ATA133
	CompactFlash	--	--	Yes	--
	Floppy	--	Yes	Yes	Yes
I/O Ports	USB	8x USB 2.0	5x USB 2.0	5x USB 2.0	4x USB 2.0
	LPT	Yes	Yes	Yes	Yes
	COM	4x RS-232, 2x RS-232/422/485/485+	1x RS-232, 1 x RS232/422/485/485+	1 x RS-232, 1 x RS-232/422/485/485+	1x RS-232, 1x RS-232/422/485
	PS/2 KB/MS	Yes (internal pin header)	Yes (internal pin header)	Yes (internal pin header)	Yes (Mini-DIN)
	Audio	optional audio board	optional audio board	optional audio board	optional audio cable
Expansion Slots		1x PCIe Mini Card slot	--	--	--
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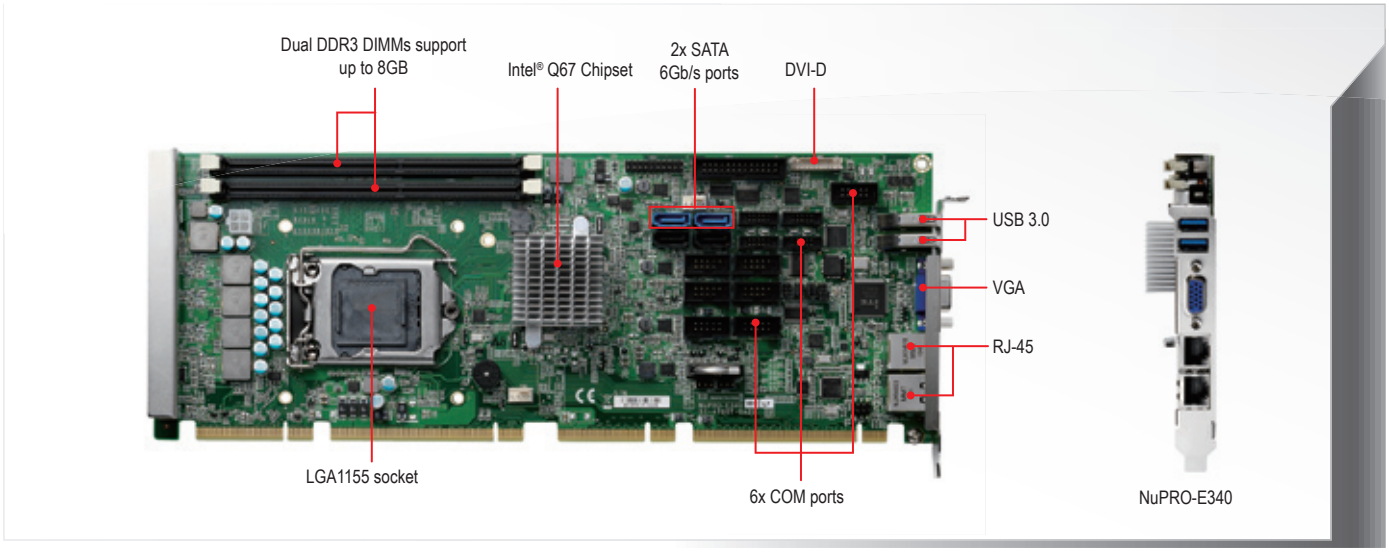
*Note: Intel® HD Graphics supported on Core i5-660/i3-540, Pentium G6950 processors only.

NuPRO-E340

PICMG® 1.3 Full-Size LGA1155 Intel® Core™ i7/i5/i3 SHB



Features

- Intel® Q67 Express chipset supporting PCI Express 2.0
- Intel® Rapid Storage Technology, supports RAID 0/1/5/10
- 6x COM ports (including 1x RS-232/422/485/485+)
- Supports USB 3.0 with 5 Gb/s data transfer rate
- Supports Serial ATA with 6 Gb/s data transfer rate

Specifications

Processor & System

CPU	Intel® Core™ i7-2600, 3.4 GHz, 8M Cache, 32nm, 95W TDP, LGA1155 (4C) Intel® Core™ i5-2400, 3.1 GHz, 6M Cache, 32nm, 95W TDP, LGA1155 (4C) Intel® Core™ i3-2120, 3.3 GHz, 3M Cache, 32nm, 65W TDP, LGA1155 (2C) Intel® Pentium® G850, 2.9 GHz, 3M Cache, 32nm, 65W TDP, LGA1155 (2C)
Chipset	Intel® Q67 Express Chipset (Cougar Point)
Memory	2x 240-pin DIMM sockets Dual-channel DDR3 1066/1333MHz, up to 8 GB
TPM	Infineon SLB 9635 TT 1.2
BIOS	AMIBIOS 64Mb SPI BIOS
Watchdog Timer	1-255 sec or 1-255 min software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, 7 32/64-bit Fedora™ 14, Red Hat Enterprise Linux 5

I/O Interfaces

Serial ATA	2x SATA 6 Gb/s ports 4x SATA 3 Gb/s ports Supports RAID 0/1/5/10
PCI/PCIe Busses (via backplane)	1x PCIe x16, Rev. 2.0 1x PCIe x4, Rev. 2.0 4x PCI 32-bit/33MHz
USB	2x USB 3.0 ports on faceplate 12x USB 2.0 ports (8x onboard pin headers and 4x backplane)
KB/MS	1x internal pin header for PS/2 keyboard/mouse
Parallel Port	1x LPT
Serial Port	5x RS-232, 1x RS-232/422/485/485+

Audio

Audio Codec	Realtek ALC262 support by DB-Audio2 daughter board
Interface	Pin header for High Definition Audio interface

Display

Graphics	Integrated Intel® HD Graphics
CRT	Resolutions up to 2048 x 1536 @ 75 Hz
DVI	1x internal pin header for DVI-D output

Ethernet

Controller	Intel® 82579LM Gigabit Ethernet PHY Intel® 82574L Gigabit Ethernet Controller
Interface	PCIe x1 bus
iAMT	Supports Intel® AMT 7.0
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.3 System Host Board
Dimensions	338 mm x 126 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-E340	PICMG 1.3 Full-size Intel® Core™ i7/i5/i3 LGA1155 SHB

Optional Accessories

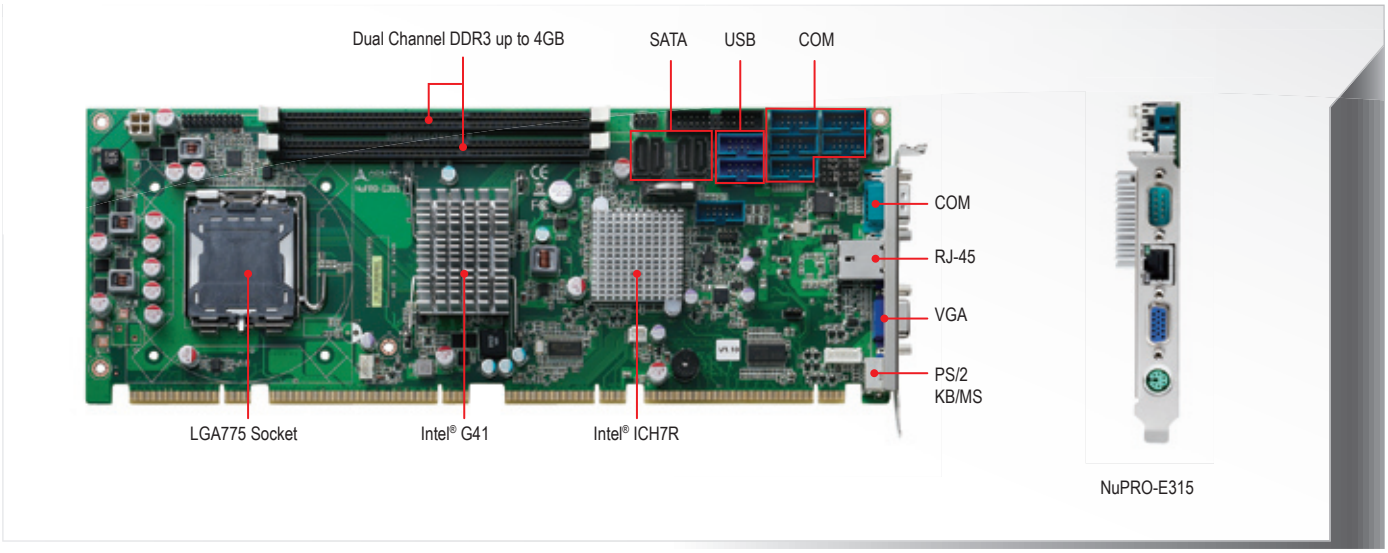
Model Number	Description/Configuration
LGA1156 1U CPU Cooler	LGA1156 1U Thermal Module
LGA1156 2U CPU Cooler	LGA1156 2U Thermal Module
LGA1156 3U CPU Cooler	LGA1156 3U Thermal Module
DB-Audio2	High Definition Audio daughter board with Mic-in/Line-in/Line-out
DVI cable with bracket	
LPT cable with bracket	
PS/2 cable with bracket for keyboard/mouse	

Packing List

NuPRO-E340	1x 2-port USB 2.0 cable with bracket
2x SATA data cable	3x 2-port COM cables with bracket
User's manual	Driver DVD

NuPRO-E315

PICMG® 1.3 Full-Size LGA775 Intel® Core™2 Duo/Quad SHB



Features

- Intel® G41+ ICH7R chipset supports up to 1333MHz FSB LGA775 Intel Core™2 Quad/Duo Processor
- Dual-channel DDR3 800/1066MHz, up to 4 GB
- Intel® Matrix Storage Technology, supports RAID 0/1/5/10
- 6x COM ports (including 1x RS-232/422/485/485+)

Specifications

Processor & System

CPU	Intel® Core™2 Quad Q9400, 2.66 GHz, 1333MHz FSB, 6M Cache, 45nm, 95W TDP, LGA775
	Intel® Core™2 Duo E8400, 3.00 GHz, 1333MHz FSB, 6M Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® Dual Core E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Pentium® Dual Core E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® Dual Core E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® Dual Core E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® Dual Core E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775
Chipset	Intel® G41 + ICH7R
Memory	2x 240-pin DIMM sockets
	Dual-channel DDR3 800/1066MHz, up to 4GB
BIOS	AMIBIOS 32Mb SPI BIOS
Watchdog Timer	1-255 sec or 1-255 min software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operation Systems	Windows® XP, 7 32/64-bit
	Fedora™ 12, Red Hat Enterprise Linux 5

I/O Interfaces

Serial ATA	4x SATA 3 Gb/s ports (supports RAID 0/1/5/10)
USB	8x USB 2.0 ports (4x onboard pin headers and 4x backplane)
KB/MS	1x PS/2 keyboard/mouse
Parallel Port	1x LPT
Serial Port	5x RS-232, 1x RS-232/422/485/485+

Audio

Audio Codec	Realtek ALC262 support by DB-Audio2 daughter board
Interface	Pin header for High Definition Audio interface

Display

Graphics	Intel® Graphics Media Accelerator X4500 integrated in 82G41 GMCH
CRT	Resolution up to 2048 x 1536 @ 75 Hz

Ethernet

Controller	Intel® 82574L Gigabit Ethernet Controller
Interface	PCIe x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.3 System Host Board
Dimensions	338 mm x 126 mm (L x W)
Operating Temp.	0˚C to 60˚C
Storage Temp.	-20˚C to 80˚C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-E315	PICMG 1.3 Full-size Intel® Core™2 Quad/Duo LGA775 SHB

Optional Accessories

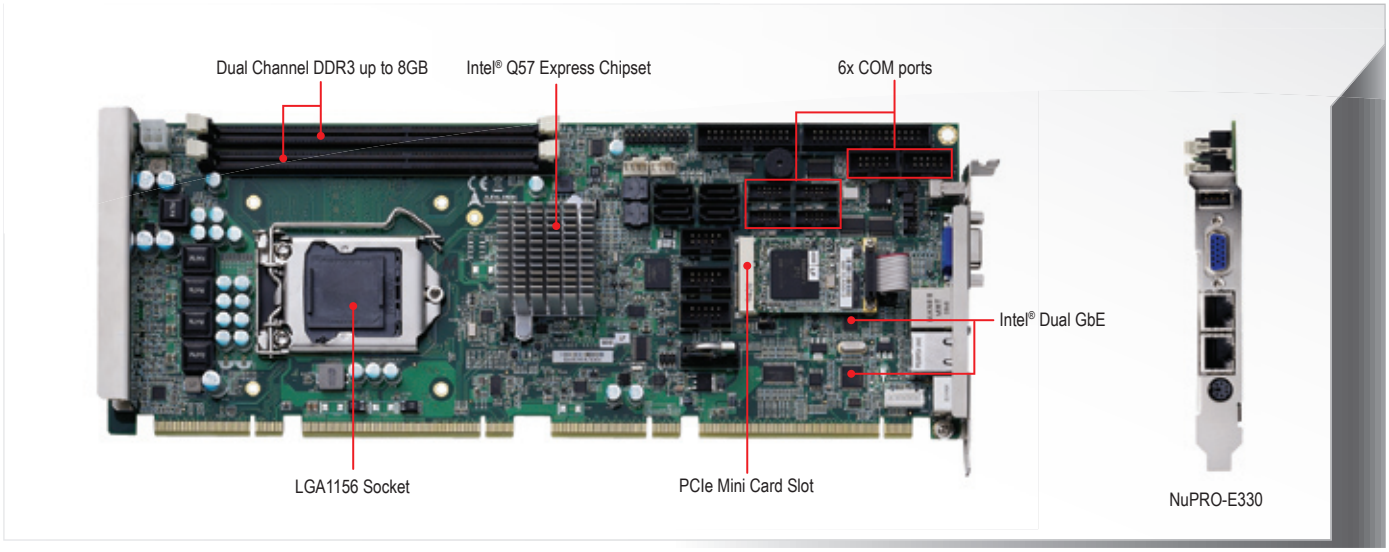
Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module
Backplate	Backplate for 3U CPU cooler
DB-Audio2	High Definition Audio daughter board with Mic-in/Line-in/Line-out

Packing List

NuPRO-E315	1x PS/2 Y-cable
1x 2-port USB 2.0 cable with bracket	2x SATA data cables
Driver CD	Quick Reference Guide

NuPRO-E330

PICMG® 1.3 Full-Size LGA1156 Intel® Core™ i7/i5/i3 SHB



Features

- LGA1156 Intel® Core™ i7/i5/i3, Pentium® Dual Core Processor
- Intel® Q57 Express Chipset supports PCI Express 2.0
- Intel® Matrix Storage Technology, supports RAID 0/1/5/10
- Intel® Active Management Technology 6.0
- PCIe Mini Card slot
- 6x COM ports (including 1x RS-232/422/485/485+)

Specifications

Processor & System

CPU	Intel® Core™ i7-860 Processor, 2.80 GHz, 8M Cache, 45nm, 95W TDP, LGA1156, No Graphics (4 cores/8 threads) Intel® Core™ i5-750 Processor, 2.66 GHz, 8M Cache, 45nm, 95W TDP, LGA1156, No Graphics (4 cores/8 threads) Intel® Core™ i5-660 Processor, 3.33 GHz, 4M Cache, 32nm, 73W TDP, LGA1156 (2 cores/4 threads) Intel® Core™ i3-540 Processor, 3.06 GHz, 4M Cache, 32nm, 73W TDP, LGA1156 (2 cores/4 threads) Intel® Pentium® Dual Core G6950 Processor, 2.80 GHz, 3M Cache, 32nm, 73W TDP, LGA1156 (2 cores/4 threads)
Chipset	Intel® Q57 Express Chipset
Memory	2x 240-pin DIMM sockets Dual-channel DDR3 1066/1333MHz, up to 8GB
TPM	Infineon® SLB9635 TT1.2
BIOS	AMIBIOS® 32Mb SPI flash memory
Watchdog Timer	1-255 sec. or min. software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista 32/64-bit, 7 32/64-bit, Server 2008 Fedora™ 10

I/O Interfaces

Serial ATA	6x SATA 3 Gb/s ports (4x onboard headers, 2x backplane) Intel® Matrix Storage Technology, supports RAID 0/1/5/10
Expansion Slots	1x PCIe Mini Card slot
USB	9x USB 2.0 ports (1x faceplate, 4x onboard pin headers and 4x via backplane)
KB/MS	1x Mini-DIN for PS/2 keyboard/mouse
Floppy	1x Floppy
Parallel Port	1x LPT
Serial Port	5x RS-232, 1x RS-232/422/485/485+

Audio

Audio Codec	Realtek® ALC262 support by DB-Audio2 daughter board
Interface	Pin header for High Definition Audio interface

Display

Integrated Graphics	Integrated in Core i5-660/i3-540, Pentium G6950 processor
External Graphics	PCI Express x16 or onboard PCI Express Mini Card slot for optional mPCIe-8770

Ethernet

Controller	Intel® 82578DM Gigabit Ethernet PHY Intel® 82574L Gigabit Ethernet Controller
Interface	PCIe x1 bus
iAMT	Supports Intel® AMT 6.0 on 82578DM
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.3 System Host Board
Dimensions	338 mm x 126 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-E330	PICMG 1.3® Full-Size Intel® Core™ i7/i5/i3 LGA1156 SHB

Optional Accessories

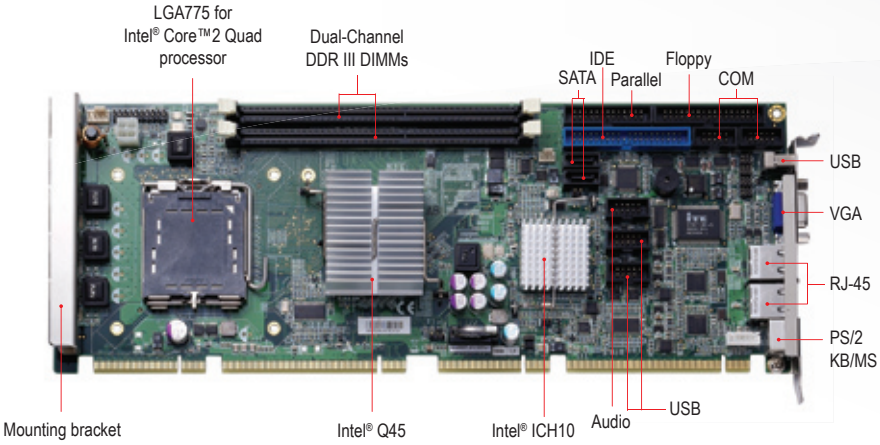
Model Number	Description/Configuration
LGA1156 1U CPU Cooler	LGA1156 1U Thermal Module
LGA1156 2U CPU Cooler	LGA1156 2U Thermal Module
LGA1156 3U CPU Cooler	LGA1156 3U Thermal Module
DB-Audio2	High Definition Audio daughter board with Mic-in/Line-in/Line-out
mPCIe-8770	PCIe 2D VGA Display Card

Packing List

NuPRO-E330	1x Y-cable for PS/2 keyboard/mouse
1x Floppy cable	1x USB 2.0 cable with bracket
1x COM port cable with bracket	1x COM+parallel port cables with bracket
2x SATA data cables	1x dual-plug SATA power cable
Driver DVD	User's manual
2x dual-port COM cables with bracket	

NuPRO-E320

PICMG® 1.3 Full-Size LGA775 Intel® Core™2 Quad/Duo SHB



Features

- Intel® Q45 + ICH10 chipset supports up to 1333 MHz FSB LGA775 Intel® Core™2 Quad/Duo processor
- Dual-Channel DDR3 800/1066 MHz, up to 4 GB
- One PCI Express® x16 and four PCI Express® x1 (or one x4) link to backplane
- Dual Gigabit Ethernet via PCI Express® x1 bus

Specifications

Processor & System

CPU	Intel® Core™2 Quad Q9400, 2.66 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 95W TDP, LGA775 Intel® Core™2 Duo E8400, 3.0 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 65W TDP, LGA775 Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775 Intel® Pentium® Dual Core E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775 Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C) Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775 Intel® Celeron® E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775 (2C) Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C) Intel® Celeron® E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775 (2C) Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775 (1C)
Chipset	Intel® Q45 + ICH10
Memory	Dual-Channel DDR3 800/1066 MHz, up to 4 GB
TPM	Infineon® SLB9635 TT1.2 (optional)
BIOS	AMI BIOS 16 Mb flash memory
Watchdog Timer	1-255 sec. or min. software programmable and can generate system reset
Hardware Monitor	CPU/System temp. fan speed, onboard DC voltages
Operating Systems	Windows® XP, Vista, 7 32/64-bit Fedora™ 8, Red Hat Enterprise Linux 5.0

I/O Interfaces

Serial ATA	4x SATA 3 Gb/s ports (2x onboard headers, 2x backplane)
USB	9x USB 2.0 ports (1x faceplate, 4x onboard pin headers, and 4x backplane)
KB/MS	1x PS/2 keyboard/mouse
Floppy	1x Floppy
Parrallel Port	1x LPT
Serial Port	1x RS-232, 1x RS-232/422/485/485+

Audio

Audio Codec	Realtek ALC262 support by DB-Audio2 daughter board
Interface	Pin header for High Definition Audio interface

Display

Graphics	Intel® Graphics Media Accelerator 4500
CRT	Up to 2048 x 1536 @ 75 Hz (QXGA)

Ethernet

Controller	Dual Intel® 82574L PCIe® network controllers (optional) 10/100/1000Base-T dual-Gigabit Ethernet
Interface	PCIe®x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.3 System Host Board
Dimensions	338 mm x 126 mm (L x W)
Operating Temp.	0˚C to 60˚C
Storage Temp.	-20˚C to 80˚C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-E320DV	Full-Size PICMG® 1.3 LGA775 Intel® Core™2 Quad/Duo SHB with dual-channel DDR3, TPM, dual GbE, SATA II
NuPRO-E320LV	Full-Size PICMG® 1.3 LGA775 Intel® Core™2 Quad/Duo SHB with dual-channel DDR3, GbE, SATA II

Note 1: CPU, Memory module and Cooler kit are not included.

Optional Accessories

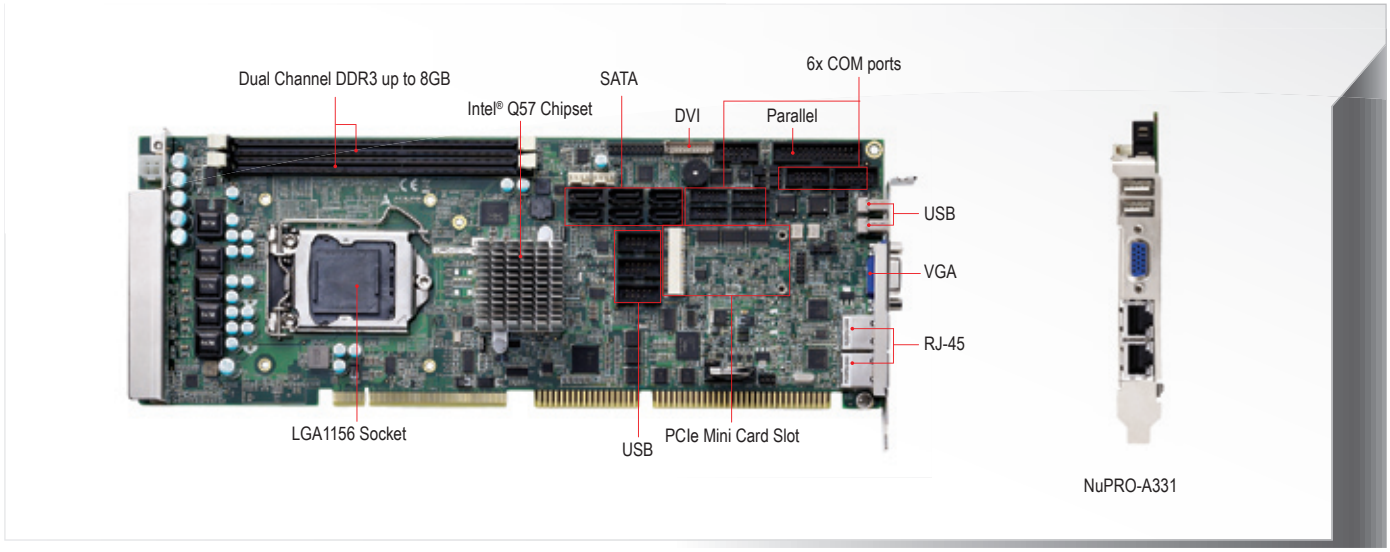
Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module
Backplate	Backplate for 3U CPU cooler
DB-Audio2	High Definition audio daughter board with mic-in/line- in/line-out

Packing List

NuPRO-E320	1x COM+Parallel port cables with bracket
1x Y-cable for PS/2 keyboard/mouse	2x SATA data cables
1x UltraATA 100 IDE cable	1x dual-plug SATA power cable
1x Floppy cable	Driver DVD
1x USB 2.0 cable with bracket	User's manual
1x COM port cable with bracket	

NuPRO-A331

PICMG® 1.0 Full-Size LGA1156 Intel® Core™ i7/i5/i3 SBC



Features

- LGA1156 Intel® Core™ i7/i5/i3, Pentium® Dual Core Processor
- Intel® Q57 Express Chipset supports PCI Express 2.0
- Intel® Matrix Storage Technology, supports RAID 0/1/5/10
- Dual-Channel DDR3-1066/1333 MHz, up to 8GB
- PCIe Mini Card slot
- 6x COM ports (including 2x RS-232/422/485/485+)

Specifications

Processor & System

CPU	Intel® Core™ i7-860 Processor, 2.80 GHz, 8M Cache, 45nm, 95W TDP, LGA1156, No Graphics (4 cores/8 threads) Intel® Core™ i5-750 Processor, 2.66 GHz, 8M Cache, 45nm, 95W TDP, LGA1156, No Graphics (4 cores/8 threads) Intel® Core™ i5-660 Processor, 3.33 GHz, 4M Cache, 32nm, 73W TDP, LGA1156 (2 cores/4 threads) Intel® Core™ i3-540 Processor, 3.06 GHz, 4M Cache, 32nm, 73W TDP, LGA1156 (2 cores/4 threads) Intel® Pentium® Dual Core G6950 Processor, 2.80 GHz, 3M Cache, 32nm, 73W TDP, LGA1156 (2 cores/4 threads)
Chipset	Intel® Q57 Express Chipset (Ibex Peak)
Memory	2x 240-pin DIMM sockets Dual-channel DDR3 1066/1333MHz, up to 8GB
TPM	Infineon® SLB9635 TT1.2 (optional)
BIOS	AMIBIOS® 8MB SPI flash memory
Watchdog Timer	1-255 sec. or min. software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, 7 32/64-bit, Server 2008 Fedora™ 12, Red Hat Enterprise Linux 5

I/O Interfaces

Serial ATA	6x SATA 3 Gb/s ports Intel® Matrix Storage Technology, supports RAID 0/1/5/10
Expansion Slots	1x PCIe Mini Card slot
USB	8x USB 2.0 ports (2x faceplate, 6x onboard pin headers)
KB/MS	1x onboard pin header for PS/2 keyboard/mouse
Parallel Port	1x LPT
Serial Port	4x RS-232, 2x RS-232/422/485/485+

Audio

Audio Codec	Realtek® ALC262 support by DB-Audio2 daughter board
Interface	Pin header for High Definition Audio interface

Display

Integrated Graphics	Integrated in i5-660/i3-540/G6950 processor
External Graphics	PCI Express Mini Card slot for optional mPCIe-8770 Onboard pin header for DVI-D (optional)

Ethernet

Controller	Dual Intel® 82574L Gigabit Ethernet Controller (optional)
Interface	PCIe x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.0 SBC
Dimensions	338 mm x 122 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-A331/DV	PICMG 1.0® Full-Size Intel® Core™ i7/i5/i3 LGA1156 SBC with DDR3, Dual-GbE, mini PCIe slot, TPM, DVI
NuPRO-A331/LV	PICMG 1.0® Full-Size Intel® Core™ i7/i5/i3 LGA1156 SBC with DDR3, Single-GbE

Optional Accessories

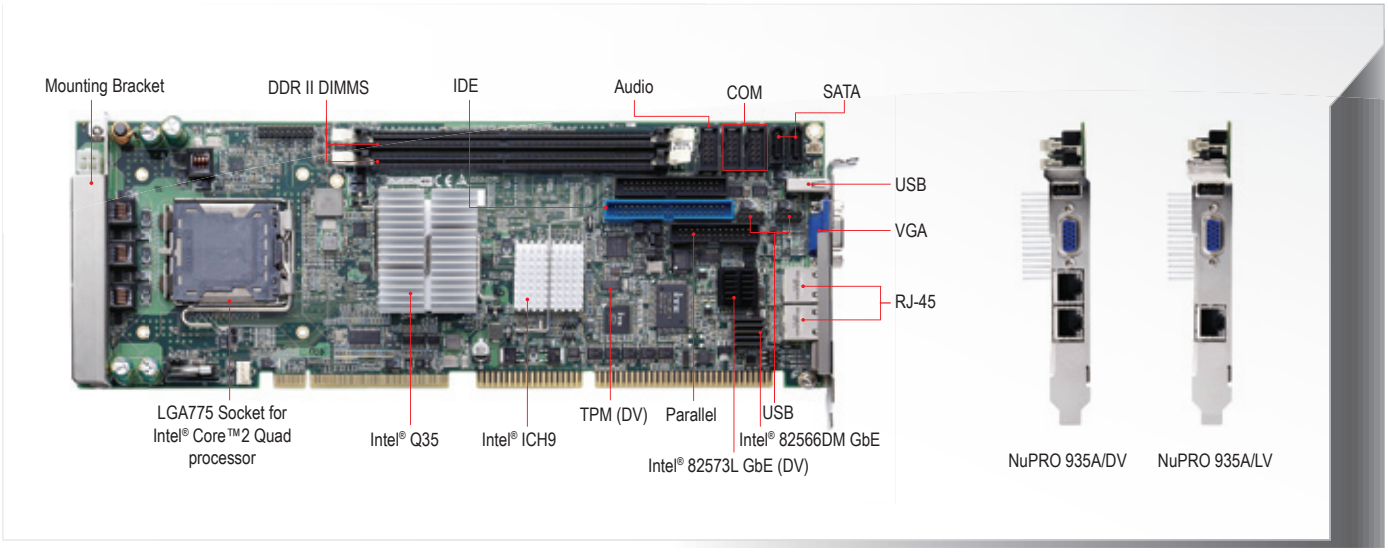
Model Number	Description/Configuration
LGA1156 1U CPU Cooler	LGA1156 1U Thermal Module
LGA1156 2U CPU Cooler	LGA1156 2U Thermal Module
LGA1156 3U CPU Cooler	LGA1156 3U Thermal Module
DB-Audio2	High Definition Audio daughter board with Mic-in/Line-in/Line-out
mPCIe-8770	PCIe 2D VGA Display Card
DVI cable with bracket	
LPT cable with bracket	
PS/2 cable with bracket for keyboard/mouse	

Packing List

NuPRO-A331	1x USB 2.0 cable with bracket
3x 2-port COM cables with bracket	2x SATA data cable
Driver DVD	User's manual

NuPRO-935A

PICMG® 1.0 SBC with Intel® Q35 Chipset, VGA, SATA, Dual GbE, USB, IDE, FDD



Features

- Intel® Core™2 Duo/Quad processors support up to 1333 MHz FSB
- Trusted Platform Module
- Dual Intel® Gigabit Ethernet controllers
- Optional High Definition Audio kit

Specifications

Processor & System

CPU	Intel® Core™2 Quad Q9400, 2.66 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 95W TDP, LGA775FSB
	Intel® Core™2 Duo E8400, 3.0 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512K L2 Cache, 35nm, 65W TDP, LGA775 (1C)
Chipset	Intel® Q35 + ICH9 Express Chipset
Memory	2 x 240-pin DIMM sockets
	Dual-Channel DDR2-800/667 SDRAM, up to 4 GB
TPM	Infineon SLB9635 TT 1.2 (optional)
BIOS	AMI BIOS/ SPI Flash ROM 16Mb
Watchdog Timer	1-255 sec. or min. software programmable
Hardware Monitor	CPU/System temperatures, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista, 7 32/64-bit
	Fedora™ 8, Red Hat Enterprise Linux 5

I/O Interfaces

IDE (PATA)	1x UltraATA 66/100/133, support one device
Serial ATA	2x SATA 3 Gb/s ports
USB	5x USB 2.0 ports (1x faceplate, 4x onboard pin headers)
KB/MS	Internal pin header for keyboard/mouse
Parallel Port	1x LPT
Serial Port	1x RS-232, 1x RS-232/422/485/485+

Audio

Audio Codec	Realtek® ALC262 on DB-Audio2 daughter board
Interfaces	Supports HDA Line-in/Line-out/Mic-in

Display

Graphics	Intel® GMA 3100 integrated in Intel® Q35 GMCH
VRAM	Shared with system memory up to 256 MB
CRT	External D-sub 15 connector, up to 2048x1536 @ 75Hz

Ethernet

Controller	Intel® 82566DM and Intel® 82573L (optional)
Interface	2x 10/100/1000Mbps Ethernet ports
Wake On LAN	Supported on 82566DM

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.0 SBC
Dimensions	338 mm x 122 mm (L x W)
Operating Temp.	0 to 60˚C
Storage Temp.	-20 to 80˚C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-935A/DV	PICMG® 1.0 Core™2 Quad/Duo Single Board Computer, Q35/ICH9, TPM, Dual GbE/SATA II/ IDE
NuPRO-935A/LV	PICMG® 1.0 Core™2 Quad/Duo Single Board Computer, Q35/ICH9, GbE/SATA II/ IDE

Optional Accessories

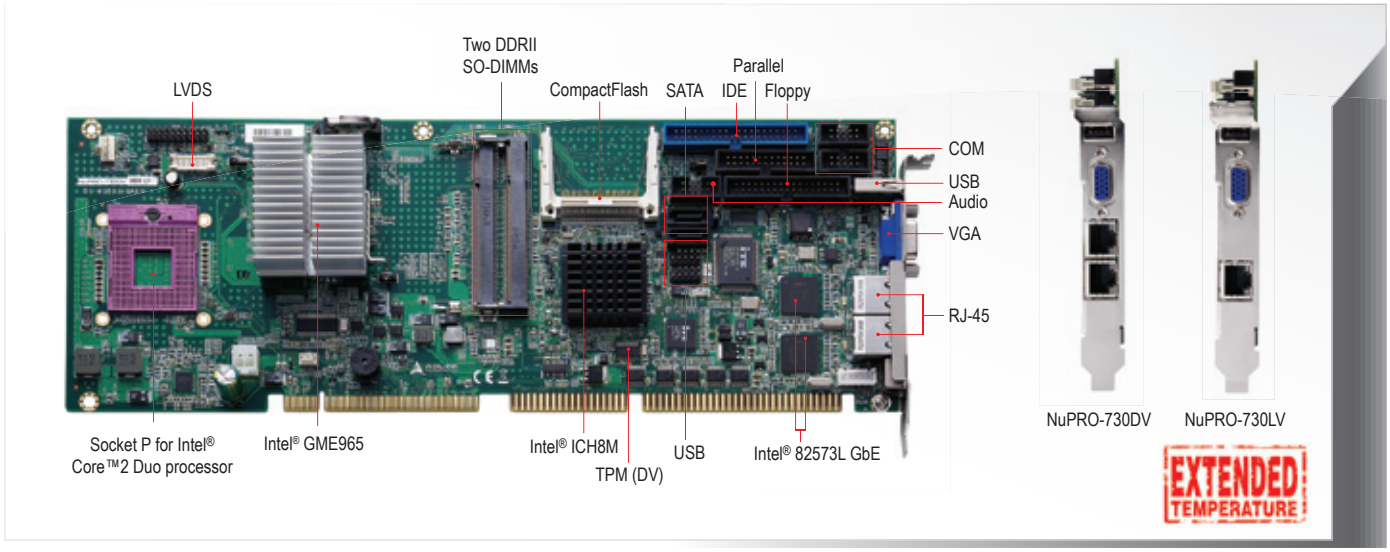
Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module
Backplate	Backplate for 3U CPU cooler
DB-Audio2	High Definition Audio daughter board supports Line-in, Line-out, and Mic-in

Packing List

NuPRO-935A	1x COM+Parallel port cables with bracket
2x SATA data cables	1x UltraATA 100 IDE cable
1x dual-plug SATA power cable	Driver DVD
1x USB 2.0 cable with bracket	User's manual
1x COM port cable with bracket	

NuPRO-730

Intel® Core™2 Duo Mobile PICMG® 1.0 SBC



Features

- Intel® Core™2 Duo/Celeron® Mobile processors in Micro-FCPGA package (Socket P)
- Integrated Graphics Controller, supports Dual Independent Display on VGA/LVDS
- Trusted Platform Module
- Dual Intel® Gigabit Ethernet controllers
- Optional High Definition Audio kit
- Extended temperature support (-20°C to 70°C)

Specifications

Processor & System

CPU	Intel® Core™2 Duo Mobile T7500, 2.2 GHz, FSB 800MHz, 4MB L2 Cache, 65nm, 35W TDP
	Mobile Intel® Celeron® M 550, 2 GHz, FSB 533MHz, 1MB L2 Cache, 65nm, 27W TDP
Chipset	Intel® GME965 + ICH8M Express Chipset
Memory	2 x 200-pin SO-DIMM sockets supporting dual-channel DDR2-667 SDRAM, up to 4 GB
TPM	Infineon SLB9635 TT 1.2 (optional)
BIOS	AMI BIOS/ SPI Flash ROM 16 Mb
Watchdog Timer	1-255 sec. or min. software programmable
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista
	Fedora™ 8, Red Hat Enterprise Linux 5

I/O Interfaces

IDE (PATA)	1x UltraATA 66/100/133 supports up to 2 devices
CompactFlash	1x CompactFlash type II socket (share with IDE)
Serial ATA	2x SATA 3 Gb/s ports
USB	5x USB 2.0 ports (1 x faceplate, 4 x onboard pin headers)
KB/MS	Internal pin header for keyboard
Floppy	1x Floppy
Parallel Port	1x LPT
Serial Port	1x RS-232, 1x RS-232/422/485/485+

Audio

Audio Codec	Realtek ALC262 on DB-Audio2 daughter board
Interface	Pin header for High Definition Audio interface

Display

Graphics	Intel® GMA X3100 Integrated in Intel® GME965 GMCH
VRAM	Shared with system memory up to 384 MB
CRT	External Dsub-15 connector, up to 2048x1536 @ 75 Hz
LVDS	Single channel 24-bit LVDS

Ethernet

Controller	Dual Intel® 82573L (optional)
Interface	Two 10/100/1000Mbps Ethernet ports
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.0 SBC
Dimensions	338 mm x 122 mm (L x W)
Operating Temp.	-20°C to 70°C
Storage Temp.	-40°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-730DV	PICMG® 1.0 Full-size SBC, Mobile Core™2 Duo/Celeron® (Socket P), GME965/ICH8M, TPM, VGA/LVDS, Dual GbE, SATA II, IDE and Floppy
NuPRO-730LV	PICMG® 1.0 Full-size SBC, Mobile Core™2 Duo/Celeron® (Socket P), GME965/ICH8M, VGA/LVDS, GbE, SATA II, IDE and Floppy

Optional Accessories

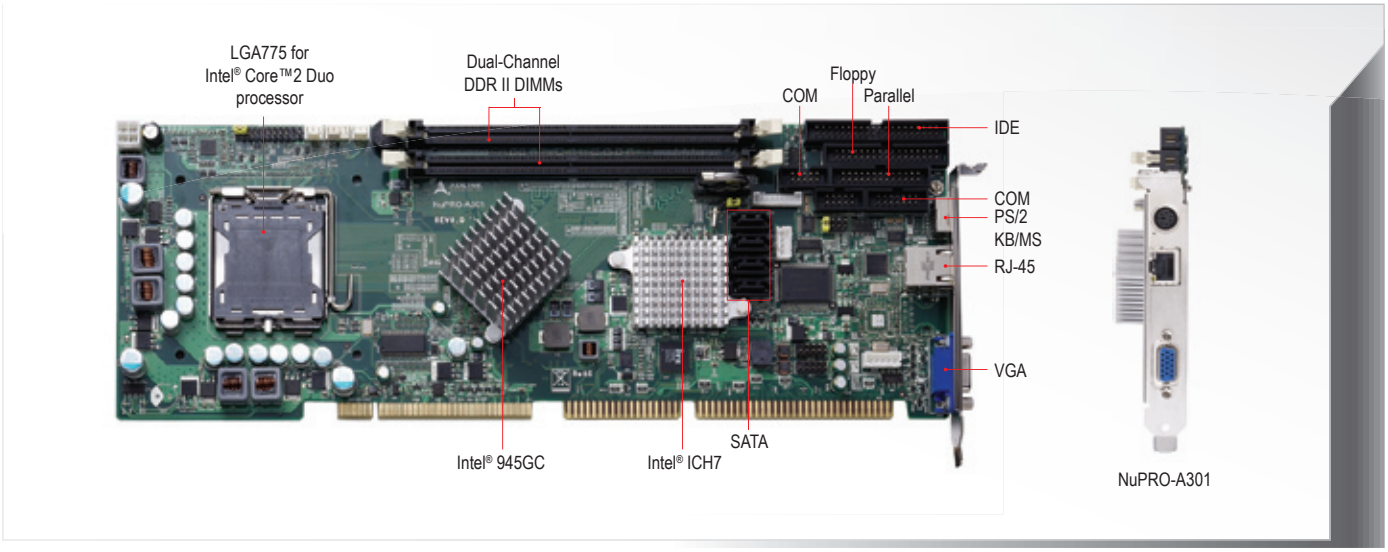
Model Number	Description/Configuration
Socket-M 1U CPU Cooler	1U CPU cooler with backplate
DB-Audio2	High Definition Audio daughter board supports Line-in, Line-out, and Mic-in

Packing List

NuPRO-730	1x COM+Parallel port cables with bracket
2x SATA data cables	1x UltraATA 100 IDE cable
1x dual-plug SATA power cable	1x Floppy cable
Driver DVD	1x USB 2.0 cable with bracket
User's manual	1x COM port cable with bracket

NuPRO-A301

PICMG® 1.0 Full-Size LGA775 Intel® Core™2 Duo SBC



Features

- PICMG® 1.0 Full-Size SBC
- Intel® 945GC + ICH7 chipset supports up to 800 MHz FSB, LGA775 Intel® Core™2 Duo processor
- Dual-Channel DDR2 533/667 MHz, up to 2 GB

Specifications

Processor & System

CPU	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® Dual Core E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775 (1C)
	Intel® Pentium® 4 651, 3.4 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 95W TDP, LGA775 (1C)
	Intel® Celeron® D 352, 3.2 GHz, 533MHz FSB, 512KB L2 Cache, 65nm, 95W TDP, LGA775 (1C)
Chipset	Intel® 945GC + ICH7
Memory	Dual-Channel DDR2 533/667 MHz, up to 2 GB
BIOS	AMI BIOS 16 Mb flash memory
Watchdog Timer	1-255 sec. or min. software programmable and can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista
	Fedora™ 8

I/O Interfaces

IDE (PATA)	1x ATA 33/66/100
Serial ATA	4x SATA 3 Gb/s ports
USB	4x USB 2.0 ports on onboard pin header
KB/MS	1x PS/2 keyboard/mouse
Floppy	1x Floppy
Parallel Port	1x LPT
Serial Port	1x RS-232, 1x RS-232/422/485

Audio

Audio Codec	Realtek ALC655 supported by IP-ALCS20 daughter board
Interface	Pin header for AC'97 audio interface

Display

Graphics	Intel® Graphics Media Accelerator 950
VRAM	224MB
CRT	Up to 2048 x 1536 @ 75 Hz (QXGA)

Ethernet

Controller	Single Intel® 82574L PCIe® network controller 10/100/1000Base-T Gigabit Ethernet
Interface	PCIe®x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Full-Size PICMG® 1.0 SBC
Dimensions	338 mm x 122 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
NuPRO-A301	Full-Size PICMG® 1.0 LGA775 Intel® Core™2 Duo SBC with dual-channel DDR2, GbE, SATA II

Note 1: CPU, Memory module and Cooler kit are not included.

Optional Accessories

Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module
Backplate for 3U Cooler	Backplate for 3U CPU cooler
IP-ALCS20	AC'97 audio daughter board with mic-in/ line-in/line-out

Packing List

NuPRO-A301	1x COM+Parallel port cable with bracket
1x Y-cable for PS/2 keyboard/mouse	2x SATA data cables
1x UltraATA 100 IDE cable	2x SATA power cables
1x Floppy cable	Driver CD
1x USB 2.0 cable with bracket	User's manual
1x RS-232/422/485 cable with bracket	

Selection Guide

Industrial Motherboard

Mini-ITX

Model Name		MI-220	MI-110	MI-960	MI-965
CPU	Socket	Socket-G2	--	LGA 775	Socket P
	CPU Support	Intel® Core™ i7/i5	Intel® Atom™ N270	Intel® Core™2 Duo	Intel® Core™2 Duo
	FSB	N/A	533 MHz	1066/800/533 MHz	800/533 MHz
Chipset	Northbridge	N/A	945GSE	Q965	GME965
	Southbridge	QM67	ICH7M	ICH8	ICH8M
Memory	DIMM Type	DDR3	DDR2	DDR2	DDR2
	Speed	1066/1333 MHz	533 MHz	800/667/533 MHz	667/533 MHz
	DIMM	2(SO-DIMM)	1	2	2
	Max. Capacity	8 GB	2 GB	4 GB	4 GB
	ECC/Reg.	--	--	--	--
Form Factor	Dimensions	170 mm x 170 mm	170 mm x 170 mm	170 mm x 170 mm	170 mm x 170 mm
Display	Graphics	Intel® HD Graphics	Intel® GMA 950	Intel® GMA 3000	Intel® GMA X3100
	Video Memory	--	DVMT 224 MB	DVMT 256 MB	DVMT 384 MB
	DVI support	Yes	--	--	--
	HDMI support	2	--	--	--
	LVDS Support	Yes	--	Yes	Yes
Ethernet	Gigabit	2	2	2	2
	Controller	Intel® 82579LM and Intel® 82574L	Realtek® 8111C	Marvell 88E8053 and Intel® 82566DM	Intel® 82573L and 82566DC
Storage	Serial ATA	2x SATA 6 Gb/s ports, 1x SATA 3 Gb/s ports	2x SATA 1.5 Gb/s	2x SATA 3 Gb/s	2x SATA 3 Gb/s
	IDE	--	1x ATA133	1x ATA133	1x ATA133
	CompactFlash	--	Yes	Yes	Yes
	Floppy	--	--	--	--
I/O Ports	USB	6x USB 2.0 ports	6x USB 2.0	8x USB 2.0	8x USB 2.0
	LPT	--	--	--	Yes
	COM	3x RS-232, 1x RS-232/422/485	4x RS-232	2x RS-232	2x RS-232
	PS/2 KB/MS	Yes (internal pin header)	Yes (Mini-DIN)	Yes (Mini-DIN)	Yes (Mini-DIN)
	Audio	Realtek ALC892	Realtek ALC888	Realtek ALC262	Realtek ALC888
Expansion Slots		One PCIe x16, one PCIe x4, PCIe Mini Card	One PCIe Mini Card slot, one PCI slot	One PCI slot	One PCIe x16, one PCI slot
Page Number		1-11	1-12	1-13	1-14

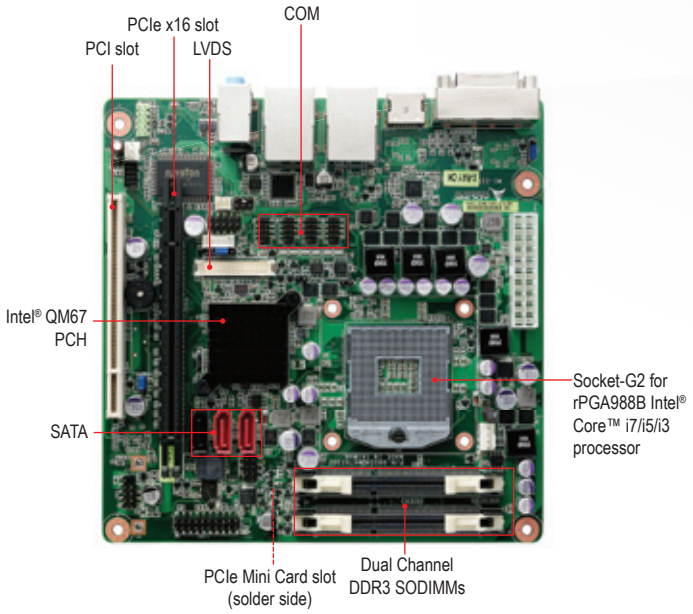
FlexATX

ATX

Model Name		M-321	M-342	M-322	M-302
CPU	Socket	LGA775	LGA1155	LGA 775	LGA775
	CPU Support	Intel® Core™2 Quad/Duo	Intel® Core™ i7/i5/i3	Intel® Core™2 Duo	Intel® Core™2 Duo
	FSB	1333/1066/800 MHz	N/A	1333/1066/800 MHz	1066/800/533 MHz
Chipset	Northbridge	Q45	N/A	Q35	Q965
	Southbridge	ICH10	Q67	ICH9DO	ICH8DO
Memory	DIMM Type	DDR3	DDR3	DDR2	DDR2
	Speed	1066/800 MHz	1066/1333 MHz	800/667/533 MHz	800/667/533 MHz
	DIMM	2	4	4	4
	Max. Capacity	8 GB	16 GB	8 GB	8 GB
	ECC/Reg.	--	--	--	--
Form Factor	Dimensions	229 mm x 191 mm	305 mm x 244 mm	305 mm x 244 mm	304.8 mm x 243.84 mm
Display	Graphics	Intel® GMA 4500	Intel® HD Graphics	Intel® GMA 3100	Intel® GMA 3000
	Video Memory	DVMT 512MB	--	DVMT 256 MB	256 MB
	DVI support	Yes	Yes	--	--
	HDMI support	--	1	--	--
	LVDS Support	Yes	--	--	--
Ethernet	Gigabit	2	2	2	1
	Controller	Intel® 82574L	Intel® 82579LM and Intel® 82574L	Realtek® 8111C	Intel® 82566DM
Storage	Serial ATA	4x SATA 3 Gb/s	2x SATA 6 Gb/s ports, 4x SATA 3 Gb/s ports	6x SATA 3 Gb/s	6x SATA 3 Gb/s
	IDE	--	--	1x ATA133	1x ATA133
	CompactFlash	--	--	--	--
	Floppy	--	--	Yes	Yes
I/O Ports	USB	8x USB 2.0	12x USB 2.0 ports	12x USB 2.0	10x USB 2.0
	LPT	Yes	YES	Yes	Yes
	COM	2x RS-232	5x RS-232, 1x RS-232/422/485	4x RS-232	4x RS-232
	PS/2 KB/MS	Yes (Mini-DIN)	Yes (Mini-DIN)	Yes (Mini-DIN)	Yes (Mini-DIN)
	Audio	Realtek ALC262	Realtek ALC892	Realtek ALC888	ADI AD1988
Expansion Slots		One PCIe x4, one PCI slot	One PCIe x16, one PCIe x4, five PCI slots	One PCIe x16 slot, one PCIe x1 slot, five PCI slots	One PCIe x16, one PCIe x4, five PCI slots
Page Number		1-15	1-16	1-17	1-18

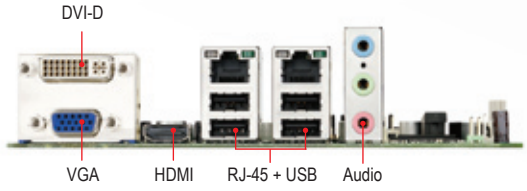
MI-220

Mini-ITX Intel® Core™ i7/i5/i3 Industrial Motherboard



Features

- Intel® Core™ i7/i5/i3 Processor
- HDMI, DVI, VGA display output
- 1x PCI Express x16 + 1x PCI slot
- Intel® Matrix Storage Technology supports RAID 0/1/5/10
- Intel® Active Management Technology 7.0



Specifications

Processor & System

CPU	Intel® Core™ i7-2710QE, 2.1 GHz, 6M Last Level Cache, 32nm, 45W TDP (4C)
	Intel® Core™ i5-2510E, 2.5 GHz, 3M Last Level Cache, 32nm, 35W TDP (2C)
	Intel® Core™ i3-2330E, 2.2 GHz, 3M Last Level Cache, 32nm, 35W TDP (2C)
	Intel® Celeron® B810, 1.6 GHz, 2M Last Level Cache, 32nm, 35W TDP (2C)
Chipset	Intel® QM67 Express Chipset
Memory	2x 204-pin SO-DIMM sockets, vertical type
	Dual-Channel DDR3 1066/1333MHz, up to 8GB
BIOS	AMI 32 Mb SPI flash
Watchdog Timer	1-255 sec or 1-255 min software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operation Systems	Windows® XP, 7 32/64-bit
	Fedora™ 14, Red Hat Enterprise Linux 5

I/O Interfaces

Serial ATA	2x SATA 6 Gb/s ports
	1x SATA 3 Gb/s ports
Expansion Slot	1x PCIe x16 slot, 1x PCI slot, 1x PCI Express Mini Card slot
USB	6x USB 2.0 ports (4x faceplate, 2x onboard pin headers)
KB/MS	PS/2 keyboard/mouse by internal pin header
Serial Port	3x RS-232 + 1x RS-232/422/485

Audio

Audio Codec	Realtek ALC892
Interface	Line-in, Line-out, Mic-in

Display

Graphics	Intel® HD Graphics integrated in processor
VRAM	Shared memory
VGA	Up to 2048 x 1536 @ 60 Hz (QXGA)
DVI	DVI-D, up to 1920 x 1200 @ 60 Hz
HDMI	HDMI Type A, up to 1920 x 1200 @ 60 Hz
LVDS	Dual Channel 24-bit LVDS, up to 1600 x 1200 (UXGA)

Ethernet

Controller	Intel® 82579LM + 82574L
Interface	PCI Express x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Mini-ITX
Dimensions	170 mm x 170 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
MI-220	Mini-ITX Intel® Core™ i7/i5 Industrial Motherboard

Optional Accessories

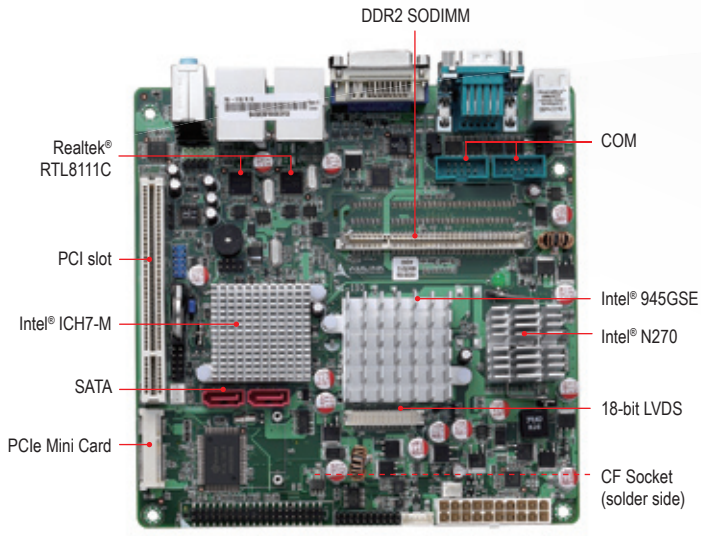
Model Number	Description/Configuration
PGA988 Cooler	cooler for MI-220, with backplate

Packing List

MI-220	MI-220 I/O Shield
2x SATA data cables	Driver CD
Quick Reference Guide	

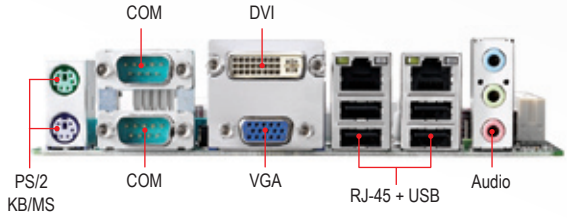
MI-110

Mini-ITX Embedded Motherboard with Intel® Atom™ Processor N270 and Intel® 945GSE/ICH7-M Chipset



Features

- Intel® Atom™ Processor N270
- Intel® 945GSE + ICH7-M Chipset
- One 200-pin SODIMM up to 2GB DDR2 533 SDRAM
- Dual Realtek RTL8111C GbE
- One PCI and one PCI Express® Mini Card slot



Specifications

Processor & System

CPU	Intel® Atom™ N270, 1.6 GHz, 533MHz FSB, 512KB L2 Cache, 45nm, 2.5W TDP, FCBGA
Chipset	Intel® 945GSE + ICH7-M Express Chipset
Memory	1x 200-pin SODIMM socket
	Support DDR2-533 SDRAM up to 2GB
BIOS	AMI BIOS®/Flash ROM 16Mb
Watchdog Timer	1-255sec./min. Software programmable
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltage
Operating Systems	Windows® XP, Vista

I/O Interfaces

IDE (PATA)	1x 40-pin ATA-66/100 IDE port
CompactFlash®	1x Type-II socket, shared with IDE port
Serial ATA	2x SATA 1.5 Gb/s ports
Expansion Slots	1x PCI™ slot
	1x PCI Express® Mini Card slot
USB	6x USB 2.0 ports, 4x external and 2x internal ports
KB/MS	2x Mini-DIN for PS/2 keyboard/mouse
Serial Port	4x RS-232 ports
GPIO	16x general–purpose digital I/O pins

Audio

Audio Codec	Realtek ALC888 codec
Interface	Mic-in/Line-in/Line-out

Display

Graphics	Intel® GMA950 integrated in 945GSE
VRAM	224 MB
CRT	External Dsub-15 connector, resolution up to 2048x1536 @ 75Hz (QXGA)
DVI	External DVI-I connector, via Chrontel 7307C, resolution up to 1600x1200 (UXGA)
LVDS	Internal header to support dual-channel 18-bit LVDS display, resolution up to 1600x1200 (UXGA)

Ethernet

Controller	Realtek 8111C GbE controller
Interface	PCIe® bus x1
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Mini-ITX
Dimensions	170 mm x 170 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-40°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

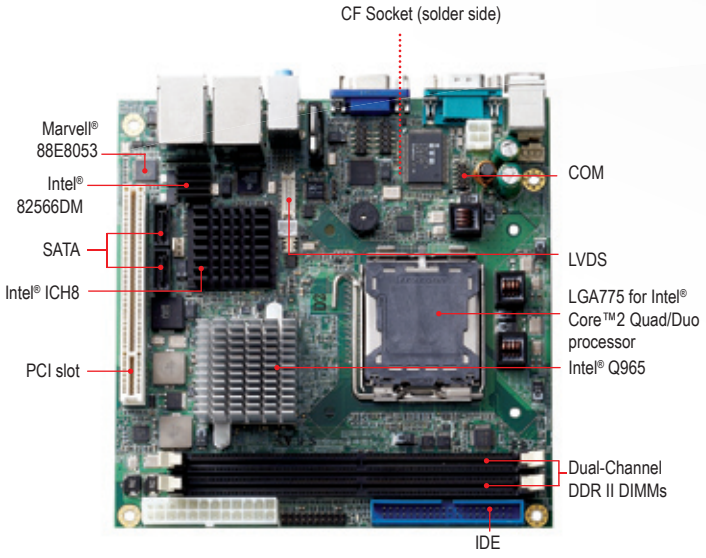
Model Number	Description/Configuration
MI-110	Mini-ITX Embedded Motherboard with Intel® Atom™ N270 processor and Intel® 945GSE/ICH7-M chipset

Packing List

MI-110	1x IDE cable
MI-110 I/O Shield	2x COM port cables with bracket
2x SATA data cables	Driver CD
2x SATA power cables	User's manual

MI-960

Mini-ITX Embedded Motherboard with Intel® Q965 Chipset, VGA, SATA, IDE, Dual-GbE, LVDS, Audio,CF



Features

- Mini-ITX Industrial Motherboard
- Supports Intel® Core™2 Duo and Pentium® 4 processors in LGA775 package
- Integrated graphics controller, supports dual-independent display
- Support dual 10/100/1000 Mbps Ethernet
- High Definition Audio codec
- Onboard CompactFlash® socket

Specifications

Processor & System

CPU	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775 (1C)
	Intel® Pentium® 4 651, 3.4 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 95W TDP, LGA775 (1C)
	Intel® Celeron® D 352, 3.2 GHz, 533MHz FSB, 512KB L2 Cache, 65nm, 95W TDP, LGA775 (1C)
Chipset	Intel® Q965 + ICH8 Express® Chipset
Memory	2 x 240-pin DIMM sockets
	Supports up to DDR2-800 SDRAM, up to 4 GB
BIOS	AMI BIOS®/ Flash ROM 16 Mb
Watchdog Timer	1-255 sec./min. software programmable
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista
	Fedora™ 8

I/O Interfaces

IDE (PATA)	1x UltraATA 66/100/133
CompactFlash®	1x CompactFlash® type II socket
Serial ATA	2x SATA 3 Gb/s ports
Expansion Slots	1x PCI™ slot
USB	8x USB 2.0 ports, 4x external and 4x internal ports
KB/MS	2x PS/2 for keyboard/mouse
Serial Port	2x RS-232 (1x external, 1x internal)

Audio

Audio Codec	Realtek ALC262 HD codec
Interface	Support HDA Mic-in/Line-in/Line-out

Display

Graphics	Integrated in Intel® Q965 GMCH
VRAM	Shared with system memory up to 256 MB
CRT	External Dsub-15 connector, resolution up to 2048 x 1536 @ 75 Hz
LVDS	Single channel 24-bit LVDS

Ethernet

Controller	Intel® 82566DM, Marvell 88E8056
Interface	PCIe® bus x1
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Mini-ITX
Dimensions	170 mm x 170 mm (L x W)
Operating Temp.	0°C to 55°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
MI-960	Mini-ITX Core™2 Duo Industrial Motherboard, Q965/ICH8, Dual-GbE, SATA, IDE, LCD, Audio, & CF

Optional Accessories

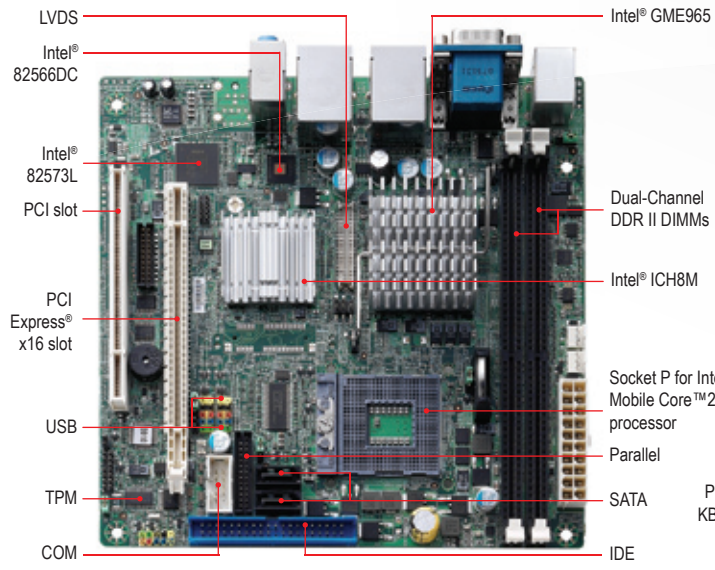
Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module
Backplate	Backplate for 3U CPU cooler

Packing List

MI-960	2x SATA data cables
MI-960 I/O shield	1x Dual-plug SATA power cable
1x UltraATA 100 IDE cable	Driver DVD
1x USB 2.0 cable with bracket	User's manual
1x COM port cable	

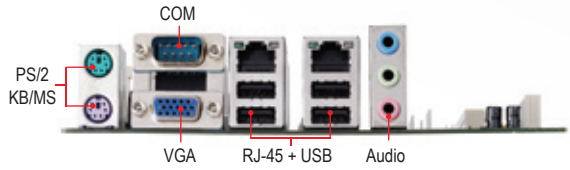
MI-965

Mini-ITX Embedded Motherboard with Intel® GME965 Chipset, VGA, SATA, IDE, Dual-GbE, LCD, Audio, & CF



Features

- Mini-ITX form factor
- Supports Intel® Core™2 Duo Mobile, Celeron® M processors - Socket P
- Integrated graphics controller, support dual independent display
- Supports PCIe® x16, PCI™
- Onboard CompactFlash socket
- RoHS compliant



Specifications

Processor & System

CPU	Intel® Core™2 Duo Mobile T7500, 2.2 GHz, FSB 800MHz, 4MB L2 Cache, 65nm, 35W TDP
	Mobile Intel® Celeron® M 550, 2 GHz, FSB 533MHz, 1MB L2 Cache, 65nm, 27W TDP
Chipset	Intel® GME965 + ICH8M Express Chipset
Memory	2x 240-pin DIMM sockets
	Supports DDR2-533/667 SDRAM, up to 4 GB
BIOS	AMI BIOS®/ Flash ROM 16 Mb
Watchdog Timer	1-255 sec./min. software programmable
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista
	Fedora™ 7

I/O Interfaces

IDE (PATA)	1x 40-pin ATA-66/100 IDE port
CompactFlash®	1x type-II socket, shared with IDE port
Serial ATA	2x SATA 3 Gb/s ports
Expansion Slots	1x PCI Express® x16 slot
	1x PCI™ slot
USB	8x USB 2.0 ports, 4x external and 4x internal ports
KB/MS	2x Mini-DIN for PS/2 keyboard/mouse
Parallel Port	1x LPT
Serial Port	2x RS-232 ports

Audio

Audio Codec	Realtek ALC888 HD codec
Interface	Support HDA Mic-in/Line-in/Line-out

Display

Graphics	GMA X3100 integrated in GME965 GMCH
VRAM	Shared with system memory up to 384 MB
CRT	External Dsub-15 connector, resolution up to 2048 x 1536 @ 60 Hz
LVDS	Dual channel 24-bit LVDS

Ethernet

Controller	Intel® 82573L and 82566DC
Interface	PCIe® bus x1
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	Mini-ITX
Dimensions	170 mm x 170 mm (L x W)
Operating Temp.	0°C to 55°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
MI-965	Mini-ITX Mobile Core™2 Duo Industrial Motherboard, GME965/ICH8M, Dual-GbE, SATA, IDE, LCD, Audio, CF

Optional Accessories

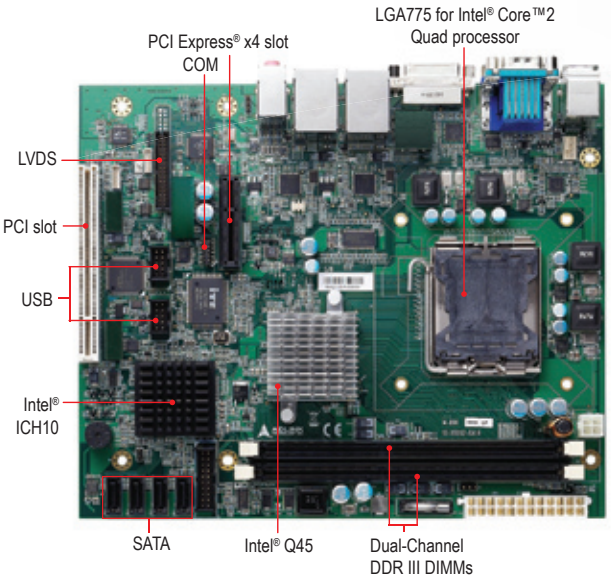
Model Number	Description/Configuration
Socket-M 1U CPU Cooler	1U CPU cooler with backplate

Packing List

MI-965	2x SATA data cables
MI-965 I/O shield	2x SATA power cables
1x UltraATA 100 IDE cable	Driver CD
1x COM+Parallel port cables with bracket	User's manual

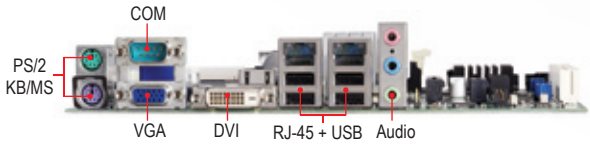
M-321

FlexATX Intel® Core™2 Quad/Duo LGA775 Industrial Motherboard



Features

- FlexATX Motherboard
- Intel® Q45 + ICH10 Chipset supports up to 1333 MHz FSB LGA775 Intel® Core™2 Quad/Duo processor
- Dual-Channel DDR3 800/1066 MHz, up to 4 GB
- Integrated Graphic supports VGA, DVI, LVDS
- One PCI Express® x4 and one PCI slot



Specifications

Processor & System

CPU	Intel® Core™2 Quad Q9400, 2.66 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 95W TDP, LGA775
	Intel® Core™2 Duo E8400, 3.0 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775 (1C)
Chipset	Intel® Q45 + ICH10
Memory	Dual-Channel DDR3 800/1066 MHz, up to 4 GB
TPM	Infineon® SLB9635 TT1.2
BIOS	AMI® BIOS 8Mb flash memory
Watchdog Timer	1-255 sec./min. software programmable and can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista
	Fedora™ 10

I/O Interfaces

Serial ATA	4x SATA 3 Gb/s ports
USB	8x USB 2.0 ports (4x faceplate, 4x onboard pin header)
KB/MS	2x Mini-DIN for PS/2 keyboard/mouse
Serial Port	2x RS-232
Expansion Slots	1x PCIe® x4, 1x PCI™

Audio

Audio Codec	Realtek ALC262 HD codec
Interface	Line-in, Line-out, Mic-in
	Onboard pin header for Line-out

Display

Graphics	Intel® Graphics Media Accelerator 4500
CRT	Up to 2048 x 1536 @ 75 Hz (QXGA)
LVDS	Single-channel 24-bit LVDS interface, resolution up to UXGA (1600 x 1200)
DVI	DVI-D interface, resolution up to UXGA (1600 x 1200)

Ethernet

Controller	Dual Intel® 82574L PCIe® network controllers
	10/100/1000Base-T dual-Gigabit Ethernet
Interface	PCIe® x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	FlexATX
Dimensions	229 mm x 191 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
M-321	FlexATX Intel® Core™2 Quad/Duo LGA775 Motherboard

Note 1: CPU, Memory module and Cooler kit are not included.

Optional Accessories

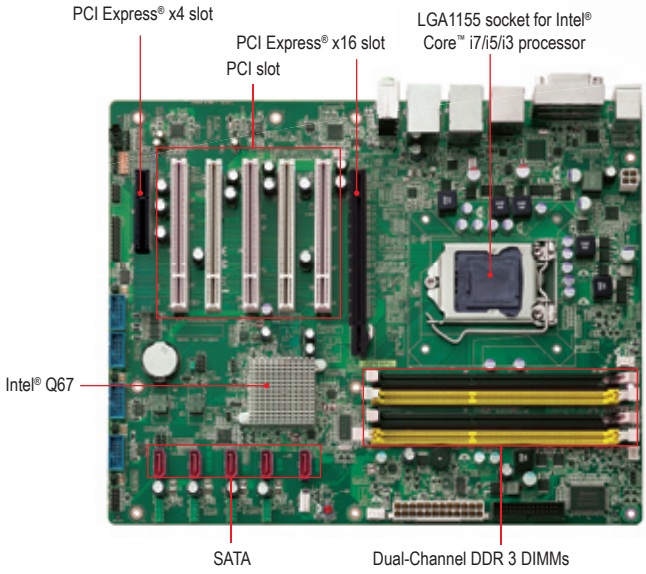
Model Number	Description/Configuration
LGA775 3U CPU Cooler	LGA775 3U Thermal Module
Backplate	LGA775 3U CPU Cooler backplate

Packing List

M-321	1x USB cable with bracket
M-321 I/O shield	1x dual-plug SATA power cable
1x COM port cable	Driver DVD
2x SATA data cables	User's manual

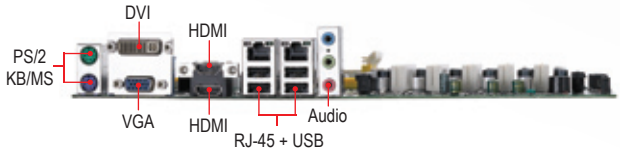
M-342

ATX Intel® Core™ i7/i5/i3 Industrial Motherboard



Features

- Intel® Core™ i7/i5/i3 Processor
- 2x HDMI, DVI, VGA display output
- Integrated Graphics or PCI Express x16
- PCI Express x4, 5x PCI slots
- Intel® Matrix Storage Technology supports RAID 0/1/5/10



Specifications

Processor & System

CPU	Intel® Core™ i7-2600, 3.4 GHz, 8M Last Level Cache, 32nm, 95W TDP, LGA1155 (4C)
	Intel® Core™ i5-2400, 3.1 GHz, 6M Last Level Cache, 32nm, 95W TDP, LGA1155 (4C)
	Intel® Core™ i3-2120, 3.3 GHz, 3M Last Level Cache, 32nm, 65W TDP, LGA1155 (2C)
	Intel® Pentium® G850, 2.9 GHz, 3MB Cache, 32nm, 65W TDP, LGA1155 (2C)
Chipset	Intel® Q67 Express Chipset
Memory	4x 240-pin DIMM sockets
	Dual-Channel DDR3 1066/1333MHz, up to 16 GB
BIOS	AMI 32 Mb SPI BIOS
Watchdog Timer	1-255 sec or 1-255 min software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operation Systems	Windows® XP, 7 32/64-bit
	Fedora™ 14, Red Hat Enterprise Linux 5

I/O Interfaces

Serial ATA	2x SATA 6 Gb/s ports
	4x SATA 3 Gb/s ports
	Supports RAID 0/1/5/10
Expansion Slots	1x PCIe x16, 1x PCIe x4, 5x PCI slots
USB	12x USB 2.0 ports (4x faceplate, 8x onboard pin headers)
KB/MS	2x Mini-DIN for PS/2 keyboard/mouse
Parallel Port	1x LPT
Serial Port	5x RS-232 + 1x RS-232/422/485

Audio

Audio Codec	Realtek ALC892
Interface	Line-in, Line-out, Mic-in

Display

Graphics	Intel® HD Graphics integrated in processor
CRT	Up to 2048 x 1536 @ 75 Hz (QXGA)
DVI	DVI-D
HDMI	2x HDMI Type A

Ethernet

Controller	Intel® 82579LM + 82574L
Interface	PCI Express x1 bus
iAMT	Supports Intel® AMT 7.0
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	ATX
Dimensions	305 mm x 244 mm (L x W)
Operating Temp.	0°C to 60°C
Storage Temp.	-20°C to 80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
M-342	ATX Intel® Core™ i7/i5/i3 Industrial Motherboard

Optional Accessories

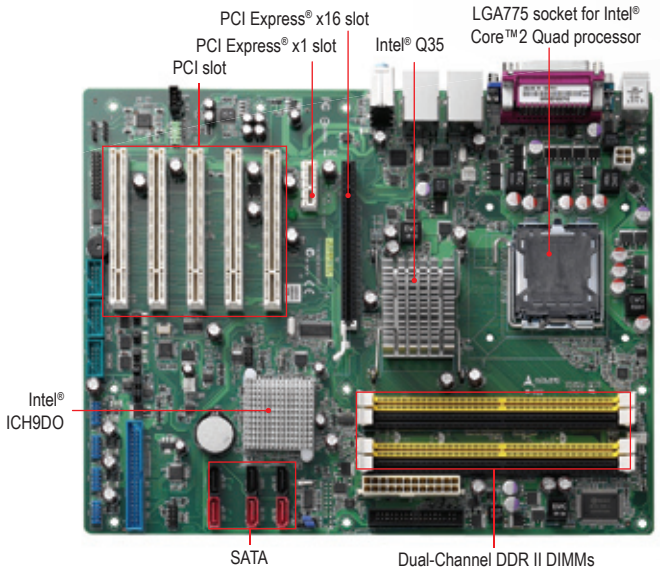
Model Number	Description/Configuration
LGA1156 1U CPU Cooler	LGA1156 1U Thermal Module
LGA1156 2U CPU Cooler	LGA1156 2U Thermal Module
LGA1156 3U CPU Cooler	LGA1156 3U Thermal Module

Packing List

M-342	M-342 I/O shield
1x 2-port COM port cable with bracket	2x SATA data cables
Driver CD	Quick Reference Guide

M-322

ATX Intel® Core™2 Quad LGA775 Industrial Motherboard



Features

- Intel® Core™2 Quad/Duo Processor in LGA775 socket
- Intel® Q35 + ICH9DO Chipset supports up to 1333MHz FSB
- Dual-Channel DDR2 667/800MHz
- Integrated Graphics or PCI Express x16
- 1x PCIe x1 slot and 5x PCI slots

Specifications

Processor & System

CPU	Intel® Core™2 Quad Q9400, 2.66 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 95W TDP, LGA775
	Intel® Core™2 Duo E8400, 3.0 GHz, 1333MHz FSB, 6MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Pentium® E6500, 2.93 GHz, 1066MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Celeron® E3400, 2.6 GHz, 800MHz FSB, 1MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® E1500, 2.2 GHz, 800MHz FSB, 512K L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775 (1C)
Chipset	Intel® Q35 + ICH9DO
Memory	4x 240-pin DIMM sockets
	Dual-Channel DDR2 667/800MHz, up to 8 GB
TPM	Onboard header for TPM (optional)
BIOS	AMIBIOS® 32 Mb SPI BIOS
Watchdog Timer	1-255 sec./min. software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operation Systems	Windows® XP, Vista, 7 32/64-bit

I/O Interfaces

IDE (PATA)	1x UltraATA-66/100/133
Serial ATA	6x SATA 3 Gb/s ports
	Intel® Matrix Storage Technology, supports RAID 0/1/5/10
Expansion Slots	1x PCIe® x16, 1x PCIe® x1, 5x PCI™ slots
USB	12x USB 2.0 ports (4x faceplate, 8x onboard pin headers)
KB/MS	2x Mini-DIN for PS/2 keyboard/mouse
Floppy	1x Floppy
Parallel Port	1x LPT
Serial Port	3x RS-232
	1x RS-232/422/485

Audio

Audio Codec	Realtek® ALC888
Interface	Line-in, Line-out, Mic-in

Display

Graphics	Intel® Graphics Media Accelerator 3100
VRAM	Shared with system memory up to 256MB
CRT	Up to 2048 x 1536 @ 75 Hz (QXGA)
External Graphics	PCI Express x16

Ethernet

Controller	Realtek® RTL8111C
Interface	PCIe x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	ATX
Dimensions	305 mm x 244 mm (L x W)
Operating Temp.	0˚C to 60˚C
Storage Temp.	-20˚C to 80˚C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
M-322	ATX Intel® Core™2 Quad LGA775 Industrial Motherboard

Optional Accessories

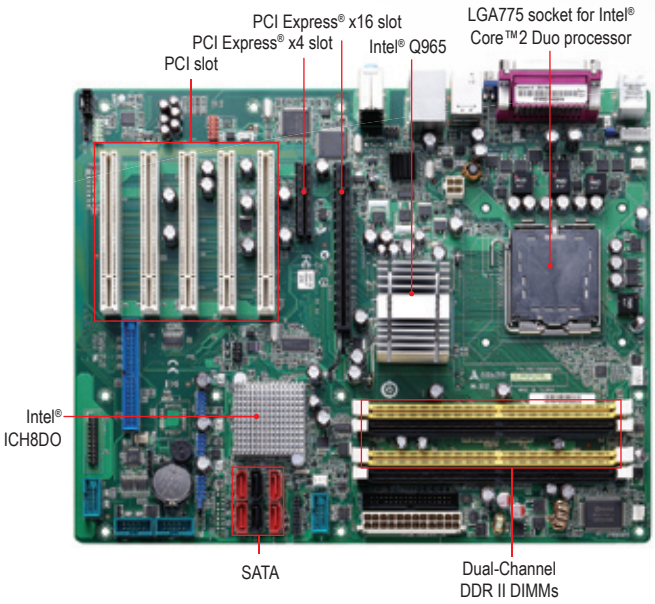
Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module

Packing List

M-322	2x SATA power cables
M-322 I/O shield	Driver CD
1x COM cable with bracket	1x 2-port COM cable with bracket
User's manual	2x SATA data cables

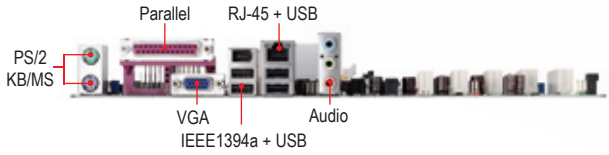
M-302

ATX LGA775 Intel® Core™2 Duo Industrial Motherboard



Features

- Intel® Core™2 Duo Processors, LGA775
- Intel® Q965 + ICH8DO Chipset supports up to 1066 MHz FSB
- Dual-Channel DDR2 533/667/800 MHz, up to 8 GB
- Integrated Graphics or PCI Express® x16
- 1x PCI Express® x4, and 5x PCI™ slots



Specifications

Processor & System

CPU	Intel® Core™2 Duo E7400, 2.8 GHz, 1066MHz FSB, 3MB L2 Cache, 45nm, 65W TDP, LGA775
	Intel® Core™2 Duo E6400, 2.13 GHz, 1066MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Core™2 Duo E4300, 1.8 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 65W TDP, LGA775
	Intel® Pentium® E5300, 2.6 GHz, 800MHz FSB, 2MB L2 Cache, 45nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® E2160, 1.8 GHz, 800MHz FSB, 1MB L2 Cache, 65nm, 65W TDP, LGA775 (2C)
	Intel® Pentium® 4 651, 3.4 GHz, 800MHz FSB, 2MB L2 Cache, 65nm, 95W TDP, LGA775 (1C)
	Intel® Celeron® 440, 2.0 GHz, 800MHz FSB, 512KB L2 Cache, 65nm, 35W TDP, LGA775 (1C)
	Intel® Celeron® D 352, 3.2 GHz, 533MHz FSB, 512KB L2 Cache, 65nm, 95W TDP, LGA775 (1C)
Chipset	Intel® Q965 + ICH8DO
Memory	4x 240-pin DIMM sockets
	Dual-Channel DDR2 533/667/800 MHz, up to 8 GB
TPM	Onboard header for TPM optional
BIOS	AWARD® BIOS 16Mb flash memory
Watchdog Timer	1-255 sec./min. software programmable, can generate system reset
Hardware Monitor	CPU/System temperature, fan speed and onboard DC voltages
Operating Systems	Windows® XP, Vista, 7 32/64-bit
	Fedora™ 8

I/O Interfaces

Serial ATA	6x SATA 3 Gb/s ports
	Intel® Matrix Storage Technology, supports RAID 0/1/5/10
Expansion Slots	1x PCIe® x16, 1x PCIe® x4, 5x PCI™ slots
USB	10x USB 2.0 ports (4x faceplate, 6x onboard pin headers)
KB/MS	2x Mini-DIN for PS/2 keyboard/mouse
Floppy	1x Floppy
Parallel Port	1x LPT
Serial Port	4x RS-232

Audio

Audio Codec	ADI® AD1988
Interface	Line-in, Line-out, Mic-in
	Onboard pin header for Line-out

Display

Graphics	Intel® Graphics Media Accelerator 3000
VRAM	Shared w/ system memory up to 256MB
CRT	Up to 2048 x 1536 @ 75 Hz (QXGA)
External Graphics	PCI Express® x16

Ethernet

Controller	Intel® 82566DM PCIe® network controller
Interface	PCIe® x1 bus
Wake On LAN	Yes

Mechanical and Environmental

Form Factor	ATX
Dimensions	305 mm x 244 mm (L x W)
Operating Temp.	0˚C to 60˚C
Storage Temp.	-20˚C to 80˚C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Ordering Information

Model Number	Description/Configuration
M-302	ATX LGA775 Intel® Core™2 Duo Industrial Motherboard

Note: CPU, Memory module and Cooler kit are not included.

Optional Accessories

Model Number	Description/Configuration
LGA775 1U CPU Cooler	LGA775 1U Thermal Module
LGA775 3U CPU Cooler	LGA775 3U Thermal Module

Packing List

M-302	2x SATA power cables
M-302 I/O shield	Driver CD
2x 2-port COM cable with bracket	User's manual
2x SATA data cables	